

ABSTRACT OF THE DISCLOSURE

A photomask comprises a substrate, a translucent film selectively formed on the substrate, and a shading film selectively formed on the translucent film,
5 wherein when the substrate, the translucent film and the shading film have Young's moduli (MPa) E_0 , E_1 and E_2 , and film thickness (m) d_0 , d_1 and d_2 respectively, internal stresses (MPa) of the translucent film and the shading film at room temperature are s_1 and s_2
10 respectively, a covering rate by the translucent film defined by an area in which the shading film is not formed is expressed as h , and coefficients are expressed as $k_1 = 1.3 \times 10^{-8}$, $k_2 = -9.5 \times 10^{-2}$, $k_3 = 6.0 \times 10^{-7}$, and $k_4 = -5.2 \times 10^{-2}$ respectively,
15 the substrate, the translucent film and the shading film satisfy a condition given by the following expression:

$$\left| \frac{1}{E_0 \cdot d_0} \cdot \left\{ h \cdot \left(k_1 \cdot \frac{s_1}{E_1 \cdot d_1} + k_2 \right) + \left(k_3 \cdot \frac{s_2}{E_2 \cdot d_2} + k_4 \right) \right\} \right| \leq 1.4 \times 10^{-4} (m^{-1})$$